Preliminary Roost Assessment
Acorn Cottage - Broad Oak, Old Rufford Road

Mr and Mrs Gaskin
Project number 265
Version 1
27 September 2023

THE BAT SURVEYOR

Report Summary

We were instructed by Mr and Mrs Gaskin to undertake a Preliminary Roost Assessment of Acorn Cottage - Broad Oak, Old Rufford Road, Rufford, Nottinghamshire, NG22 9DD, (Ordnance Survey (OS) grid SK64016501).

The Site is a small brick-built bungalow with gable ends and a cement pan-tile roof. The roof is lined with bitumen felt.

The proposals are to significantly extend the property by constructing a north and two west extensions. The existing roof will be significantly altered.

The survey confirmed that pipistrelle bats roost in the roof of the building between roof tiles and the roof membrane. The type of roost cannot be determined by a single day-time visit and further surveys have therefore been recommended in line with good practice to provide further information to inform the best approach to mitigation, compensation, and licencing.

To provide enhancement with the scheme bird, bat, and bee boxes have been recommended.

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1 Introduction, Method, and Limitations

This report outlines the results of a Preliminary Roost Assessment undertaken by Jo Pedder on 27 September 2023 at Acorn Cottage - Broad Oak, Old Rufford Road, Rufford, Nottinghamshire, NG22 9DD (called the Site from here on).

A Preliminary Roost Assessment (PRA) is an assessment of a structure for its potential value to bats, specifically when they are roosting (resting in a shelter). The aims of the survey and report are to:

1) Identify and assess Potential Roosting Features (PRF) at the Site

Different species of bat have different preferences for roosts. Some tend to roost in open spaces such as lofts, but many roost in crevices on the outside or inside of structures such as frost cracks in trees, timber joints in barns, or between roof tiles and roof membranes in houses.

2) Identify if there is direct evidence of bats roosting in the structure

This could be observed bats, faeces, or feeding remains. However, not all bat roosts have obvious signs of use, especially those in crevices on the outside of structures.

3) Assess the potential value of the structure to bats

A combination of direct signs of bats, PRF, and surrounding habitat is used to assess the potential conservation value of the structure for bats.

4) If necessary, advise on further work to be undertaken

If the Site is assessed as having potential value to roosting bats, additional surveys may be needed to inform the best approach to mitigation, compensation, and licencing. Enhancement measures are also usually included in line with planning policy.

5) Identify nesting birds

As it is a requirement of local planning authorities, the survey and report also aim to identify nesting birds, and to discuss mitigation, compensation, and enhancement for these.

A full method statement is included in Appendix 2.

Limitations

The survey was undertaken in the Autumn months. Bats may therefore not be occupying their summer roosts. Evidence of bats that may have accumulated on the outside of buildings or trees in summer may have been washed away by rain.

Any ecology assessment must be considered as a 'snapshot' of conditions at the time of the survey. Ecological constraints will change over time and therefore the findings of this report are valid for a period of one year, after which the report should be reviewed to assess whether the survey should be updated.

No constraints were such that they affect the overall conclusions and recommendations made in this report.

2 Results

To provide context to the Site, it is useful to consider the surrounding landscape and habitats. It is also important to identify and acknowledge protected wildlife habitats, such as Nature Reserves that are nearby.

Habitats in the region

The Site is within the Sherwood National Character Area (NCA). The NCA extends north from Nottingham, principally coinciding with an outcrop of sandstone which forms a belt of gently rolling hills. Historically it was managed as woodland and remains a well wooded area. The oak and birch wood pasture in the heartland of Sherwood Forest and more recent pine plantations, contribute strongly to the sense of place. Large estate parklands, heathland, open arable land and a strong mining heritage also characterise the area. The area contains the settlements of Mansfield, Worksop, Retford and Ollerton around its peripheries and sits on an aquifer that provides water to the area.

There is one granted protected species licence in the search area. This includes common pipistrelle, brown long-eared bat, and Natterer's bat.

There is one designated wildlife area within 1 km of the Site.

Table 1- Designated Areas

Designation / Location	Ecological Feature
Local Nature Reserves	
Rufford Country Park	The site supports a range of aquatic, emergent and marginal species as well as semi-improved grassland, rough unimproved grassland, secondary mixed deciduous woodland, a small area of yew wood, immature planted areas and mature individual trees.
Sites of Special Scientific Interest	
None	n/a
Special Areas of Conservation	
None	n/a
Special Protection Areas	
None	n/a
Ramsar Sites	
None	n/a

Habitats in the area around the Site

Habitats within 500 m of the Site include (in approximate order of area):

Wood pasture
Arable
Residential houses with large gardens

Figure 1, an aerial photograph of the Site, shows the Site in context with the surrounding landscape. The yellow circle has a 500 m radius.

Figure 1 – Site Location

The habitats in the area are highly suitable for foraging and commuting bats.

Habitats at the Site

The Site is a small brick-built bungalow with gable ends and a cement pan-tile roof. The roof is lined with bitumen felt.

Photos taken during the survey and detailed survey results are in Appendix 3.

Bats

Although the roof is generally in good condition, there is a small gap in the mortar of the rake on both gables.

Seven bat droppings were observed on the plastic soffit under the mortar gap on the north gable and a single bat was observed within the cavity. More bats may have been present, but the endoscope inspection stopped on confirmation of a bat to reduce disturbance. The droppings have the appearance of those of pipistrelle bats, and the bat observed is likely to be a common pipistrelle[2].

Inside the loft there were six scattered bat droppings on the floor, ten on and below the north gable wall and 50 on and below the south gable wall. The number of droppings indicate that it is likely that more than one individual bat roosts in this building.

The building has been assessed as of high potential suitability (confirmed roost) as it meets the following criteria:

> A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[3] and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

Birds

No sign of nesting birds was observed.

[2] Based on appearance as seen with an endoscope. Observation was minimised to avoid disturbance. The body shape, face shape and colouring, and outer ear shape are consistent with common pipistrelle bats, but some diagnostic features, such as the tragus, were not visible.

[3] For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance

3 Discussion

Project Proposals

The proposals are to significantly extend the property by constructing a north and two west extensions. The existing roof will be significantly altered.

Project Impacts and Constraints

Bats and their roosts (even when not occupied) are legally protected from disturbance and harm. Active bird nests are protected from damage and some species are protected from disturbance[4].

Bats

As bat roosts are present, they could be impacted by stripping tiles to tie-in the extensions, disturbance during construction, and blocking access to entrances. Bats could be harmed, and their roost destroyed.

Further Surveys

As there are confirmed bat roosts, and these will be affected by the works, nocturnal surveys are recommended to complete an assessment of the likely ecological impacts of the project. The surveys should be designed following current best practice[5] and include high-quality night vision cameras paired with recording ultrasonic bat detectors, operated by trained and experienced surveyors.

In order to be confident in the results, the minimum effort should be three bat roost surveys completed between May and August (the third visit can be between May and September). If night vision equipment is not available, one or more of the visits should be conducted in the period before dawn.

These surveys will aim to confirm whether there are additional bat roosts at the property and to identify all of the roosts' size, type and the species involved. Survey design should be iterative; each stage informing the next. The effectiveness of the surveys should be considered at each stage. In some circumstances where a roost has been identified the survey effort may need to be increased to characterise the roost if insufficient data has been gathered to determine what mitigation is appropriate.

[4] This is a very broad generalisation – see Appendix 1 for more information. This report is not legal advice and should not be relied upon as such – for detailed interpretation of the law a specialist lawyer should be consulted.

[5] The Bat Conservation Trust - Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition).

A suggested survey set up is shown in Appendix 3, with locations for observation points to cover all aspects of the building.

Mitigation and Compensation

As bats are roosting in the building the mitigation hierarchy should be followed. This is the process of identifying viable ways to mitigate or compensate for impacts:

Avoidance

This first stage is to avoid harm to biodiversity, for example by locating to an alternative site. It is the most important stage and can ease the consent process, whereas missing this stage can lead to criticism, objections, and refusal of planning permission. However, for small projects with limited land available, avoidance of effects may not be possible whilst delivering the project's goals.

Minimisation

If avoiding all adverse effects is not possible, action is taken to minimise these effects. This can be achieved, for example, by modifying the proposed layout, construction method, or altering the project timing to avoid sensitive periods.

Compensation

Addressing residual adverse effects is the final stage, considered after all possibilities of avoiding and minimising the effects have been implemented. Compensation does not prevent the effects but provides measures to offset harm that cannot be prevented. This might include providing alternative roosting features in a different location.

The mitigation and compensation scheme for this Site will be determined after the nocturnal surveys for bats has been completed. As an example it may include:

Avoiding the summer to undertake re-roofing works.
Soft stripping the roof with an ecological watching brief.
Using bitumen felt in the retained loft areas rather than a non-bitumen coated roofing membrane.
Incorporating bat boxes onto the external walls.

Licencing

If the effects of the project after applying mitigation measures may cause an offence (e.g. disturbance of bats, or damage to their roosts) then a Natural England development licence is likely to be required to allow the project to be completed lawfully. This might be either a project licence, or for certain small impacts, a class licence held by a registered ecologist (see Appendix 1 for more details on licencing).

Birds

No sign of nesting birds, or features which birds could nest in were observed during the survey. Birds are not considered to be a constraint to this project.

Ecological Enhancement and Opportunities

Under the National Planning Policy Framework and the 25-year environmental plan the government has set out policies and aims to deliver a net gain in biodiversity through improved green infrastructure and increased opportunities for wildlife.

To satisfy the local authority that this development will contribute to these aims, enhancement measures should be incorporated into the proposal. These measures should go beyond those required for mitigation and compensation.

For enhancement of the proposed development, it is recommended that roosting and nesting habitat for bats, birds, and bees is provided by incorporating wildlife boxes into the scheme.

At least one bat box, one 'universal' bird box, and one bee brick should be integrated into the façade of the proposed extensions.

> Bat boxes should be installed at a minimum height of 4 m and should be south or east facing.
> Bird boxes should be installed out of direct sunlight or else shaded day long beneath broad eaves. They should be 5 m or more above ground (or as high as possible if 5 m cannot be achieved). They should not be obstructed by nearby trees, cables, creepers, or aerials.
> Bee bricks should be positioned in a warm sunny spot, south facing, with no vegetation in front of the fascia. Ideally placed at least 1 m from the ground with no upward limit.

Examples of wildlife boxes are presented in Appendix 4.

Conclusion and Summary

The survey confirmed that pipistrelle bats roost in the roof of the building between roof tiles and the roof membrane. The type of roost cannot be determined by a single day-time visit and further surveys have therefore been recommended in line with good practice to provide further information to inform the best approach to mitigation, compensation, and licencing.

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Appendix 1 Legislation and Policy

Legislation

There are many active pieces of legislation which are aimed at protecting wildlife and habitats within the UK. These are summarised in Table 2.

Table 2 - Summary of Primary Legislation in the UK

Legislation	Description
The Wildlife and Countryside Act (WCA) 1981	The WCA is the primary piece of legislation relating to nature conservation in Great Britain. The Act is supplemented by provisions in the CRoW Act 2000 and the NERC Act 2006. It provides for the notification and confirmation of Sites of Special Scientific Interest by Natural England. It also sets out, in schedules, important and invasive species which are legally protected or require active management. The WCA consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive) in Great Britain (NB Council Directive 79/409/EEC has now been replaced by Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version)).
The Conservation of Habitats and Species Regulations 2017	The Conservation of Habitats and Species Regulations 2017 consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017 and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters).
The Countryside and Rights of Way (CRoW) Act 2000	The CRoW applies to England and Wales only, received Royal Assent on 30 November 2000, with the provisions it contains being brought into force in incremental steps over subsequent years. Containing five Parts and 16 Schedules, the Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB). The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.
Natural Environment & Rural Communities (NERC) Act 2006	The NERC places a duty on authorities to have due regard for biodiversity and nature conservation during their operations. The NERC Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list replaces the UK Biodiversity Action Pans (UKBAP) and has been drawn up in consultation with Natural England, as required by the Act. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of NERC Act, to

	have regard to the conservation of biodiversity in England, when carrying out their normal functions. Fifty-six habitats of principal importance (HPI) are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. Of most relevance to the Site, they include ponds, open mosaic habitats on previously developed land and lowland heathland. There are 943 species of principal importance (SPI) included on the S41 list. These are the species found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.

Protected Species

Bats

All species of bat in Britain are 'European Protected Species' (EPS) and are protected under the Conservation of Habitats and Species Regulations 2010, and the Wildlife and Countryside Act 1981, as amended by the Countryside & Rights of Way Act 2000. These pieces of legislation combine to give substantial protection to EPS and their habitats, making it an offence to:

Deliberately capture, injure, or kill a bat.
Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time).
Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.
Intentionally or recklessly obstruct access to a bat roost.

The Natural Environment & Rural Communities (NERC) Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during their operations.

Nesting Birds

All wild bird nests are protected under The Wildlife and Countryside Act 1981 (as amended), making it an offence to:

Intentionally kill, injure, or take any wild bird or their eggs or nests (with certain exceptions).
Disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting.

Nests of golden eagle, white-tailed eagle and osprey are protected year-round.

Bird Directive

Bird Directive Annex I lists species that shall be the subject of special conservation measures concerning their habitat to ensure their survival and reproduction in their area of distribution.

Protected Species Licencing

The animal and plant species listed on Schedule 2 and 4 of The Conservation of Habitats and Species Regulations 2010 (as amended) are referred to as European Protected Species (EPS).

If a project is likely to impact a EPS and breach the Conservation of Habitats and Species Regulations 2010, and where best practice guidance avoidance measures either cannot be followed or are not applicable, licences can be obtained to allow persons to carry out activities that would otherwise be prohibited, without committing an offence. Natural England has powers to grant such licences in England if it meets three "derogation tests."

The three tests are that:

The activity to be licensed must be for imperative reasons of overriding public interest[6] or for public health and safety ('public' can in some circumstances be interpreted as an individual or family).
There must be no satisfactory alternative.
Favourable conservation status of the species must be maintained.

There are two licencing routes available (depending on the location of the project). A Project Licence, where the developer would apply for a licence for their project and be the licensee, or a Class Licence, where a consultant is registered to use the licence and can use it for low impact activities and notify Natural England, rather than make an individual application for the project.

Low Impact Class Licence

The bat 'low impact' licence is a mitigation class licence. A consultant who is registered to use this licence can register a site and carry out certain activities that would otherwise be unlawful:

6 This is usually arguable where the project meets an identified planning need, i.e. social housing. 'Public' can be interpreted as an individual or family.

to disturb and capture up to three ‘common or widespread’ bat species (which are those listed in each annex)
to damage or destroy up to three ‘low conservation status roosts’ (these are: feeding, day, night, and transitional roosts)
if the action has a low or temporary impact on bats or their roosts
if sites are registered before you start work

Registration of a site under the licence is straightforward and Natural England accept registration from 3 days. Projects entered into a class licence have the same survey requirements as a project licence.

The Annexes define what are common or widespread species based on geographical area and experience of the consultant. In the counties that I work, Class Licences are available to damage and destroy no more than three low conservation status roosts. Of these roosts, you can disturb and capture, in appropriate small numbers, no more than three common species of:

common pipistrelle
soprano pipistrelle
brown long-eared
whiskered
Brandt’s
Daubenton’s
Natterer’s

Project Licence

The licence application consists of three documents, Section one - Application details (a basic application form), Section two - Method Statement (MS) (specifying the proposals, mitigation, compensation, and schedule and demonstrating how the project meets Test 3) and Section three - Reasoned Statement (RS) (demonstrating how the project meets Tests 1 and 2). The Application form and Method Statement i usually completed by your ecologist (who is included in the application as a Named Ecologist) and the Reasoned Statement by the client or their planning consultant or environmental lawyer.

The developer is usually the applicant and licensee and is legally responsible to carrying out the method statement. To protect other people working on the project (and to legally tie them to the MS) contractors and consultants that may affect the EPS, such as demolition or construction contractors and the ecologist should be appointed as ‘accredited agents’ to the licence by the licensee.

Natural England aim to determine an application within thirty working days, at which point they make a Further Information Request (FIR) if there are uncertainties, or they do not agree with the MS or RS. At the end of the licensable activities the licensee is

required to submit a licence return (although this is usually completed on their behalf by the Named Ecologist), where they declare the success (or failure) of the mitigation and are obliged to report on breaches to the MS.

Policy

National Planning Policy Framework (NPPF) (2021)

Chapter 15 of the National Planning Policy Framework (NPPF) aims at conserving and enhancing the natural environment and states that planning policies and decision should contribute to and enhance the natural and local environment. In terms of biodiversity this should be achieved by:

> protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils
> recognising the intrinsic character and beauty of the countryside, and wider benefits from natural capital and ecosystem services.
> minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

The NPPF states that to protect and enhanced biodiversity, [local] plans should:

> identify and safeguard components of wildlife-rich habitats and wider ecological networks.
> promote the conservation and enhancement of priority habitats and ecological networks and the protection and recovery of priority species.

The NPPF states that when determining planning applications, local planning authorities should refuse applications which:

> cause significant harm to biodiversity which cannot be avoided, adequately mitigated or as a last resort, compensated for.
> plan to develop on land within or outside of a Site of Special Scientific Interest (SSSI) and which is likely to have an adverse effect on it (either individually or in combination with other developments).
> result in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) unless there are wholly exceptional reasons and where a suitable compensation strategy exists.

The local planning authority should support developments whose primary objective is to conserve or enhance biodiversity, especially where this can secure measurable net gains in biodiversity.

HM Government – 25 Year Environment Plan

The 25-year plan to improve the environment sets out what the government intends to do to increase biodiversity, reduce climate change and secure ecosystem services. It aims to deliver cleaner air and water, protect threatened species, and provide richer wildlife habitats.

Appendix 2 Methodology

Personnel

The survey was undertaken and reported by Jo Pedder. Jo Pedder BSc. hons MCIEEM is an ecologist with over 20 years' experience in surveying for bats. Jo holds survey licences for bats (level 2 2015-15081-CLS-CLS) and great crested newts (level 1 2018-34475-CLS-CLS) and development licences for bats and newts. Jo has experience in a range of projects from barn conversions to sites over 300 ha and has worked in the minerals, housing, and energy sectors.

Preliminary Roost Assessment

A Preliminary Roost Assessment (PRA) was undertaken on 27 September 2023. The PRA followed the Bat Conservation Trust (BCT) guidelines criteria[7] (see Table Below).

A PRA is a detailed inspection of the exterior and interior of a structure to look for features that bats could use for entry/exit and roosting and to search for signs of bats.

The aim of this survey is to determine the actual or potential presence of bats and the need for further survey and/or mitigation. In many situations it is not possible to inspect all locations where bats may be present and therefore an absence of bat evidence does not equate to evidence of bat absence.

A PRA involves a detailed external and internal inspection of the structure to compile information on potential and actual bat entry/exit points; potential and actual bat roosting locations; any evidence of bats found and the number of ecologists that will be required for any subsequent surveys.

[7] The Bat Conservation Trust - Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)

BCT Roost Potential Suitability Criteria

Suitability	Roosting habitats in structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible (a)	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions (b) and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats (c)).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (b) and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions (b) and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).
b For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.
c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2016 and Jansen et al., 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Desk Study

Given the limited scale of the proposals and limited potential for impacts to arise outside the Site, a full data search was not commissioned for this stage of the project. Ordnance Survey maps and online aerial photos were used to provide site context and the online Multi-Agency Geographical Information Centre[8] (MAGIC) was used to find any internationally and nationally statutory protected areas within 1 km of the Site.

[8]www.magic.go.uk (Accessed 27 September 2023)

Appendix 3 Results

Date: 27 September 2023

Surveyor: Jo Pedder

Location: Acorn Cottage - Broad Oak, Old Rufford Road, Rufford, Nottinghamshire, NG22 9DD

Grid Reference: SK64016501

Site Description: The Site is a small brick-built bungalow with gable ends and a cement pan-tile roof. The roof is lined with bitumen felt.

Bats

Although the roof is generally in good condition, there is a small gap in the mortar of the rake on both gables.

Seven bat droppings were observed on the plastic soffit under the mortar gap on the north gable and a single bat was observed within the cavity. More bats may have been present, but the endoscope inspection stopped on confirmation of a bat to reduce disturbance. The droppings have the appearance of those of pipistrelle bats, and the bat observed is likely to be a common pipistrelle[9].

Inside the loft there were six scattered bat droppings on the floor, ten on and below the north gable wall and 50 on and below the south gable wall. The number of droppings indicate that it is likely that more than one individual bat roosts in this building.

Birds

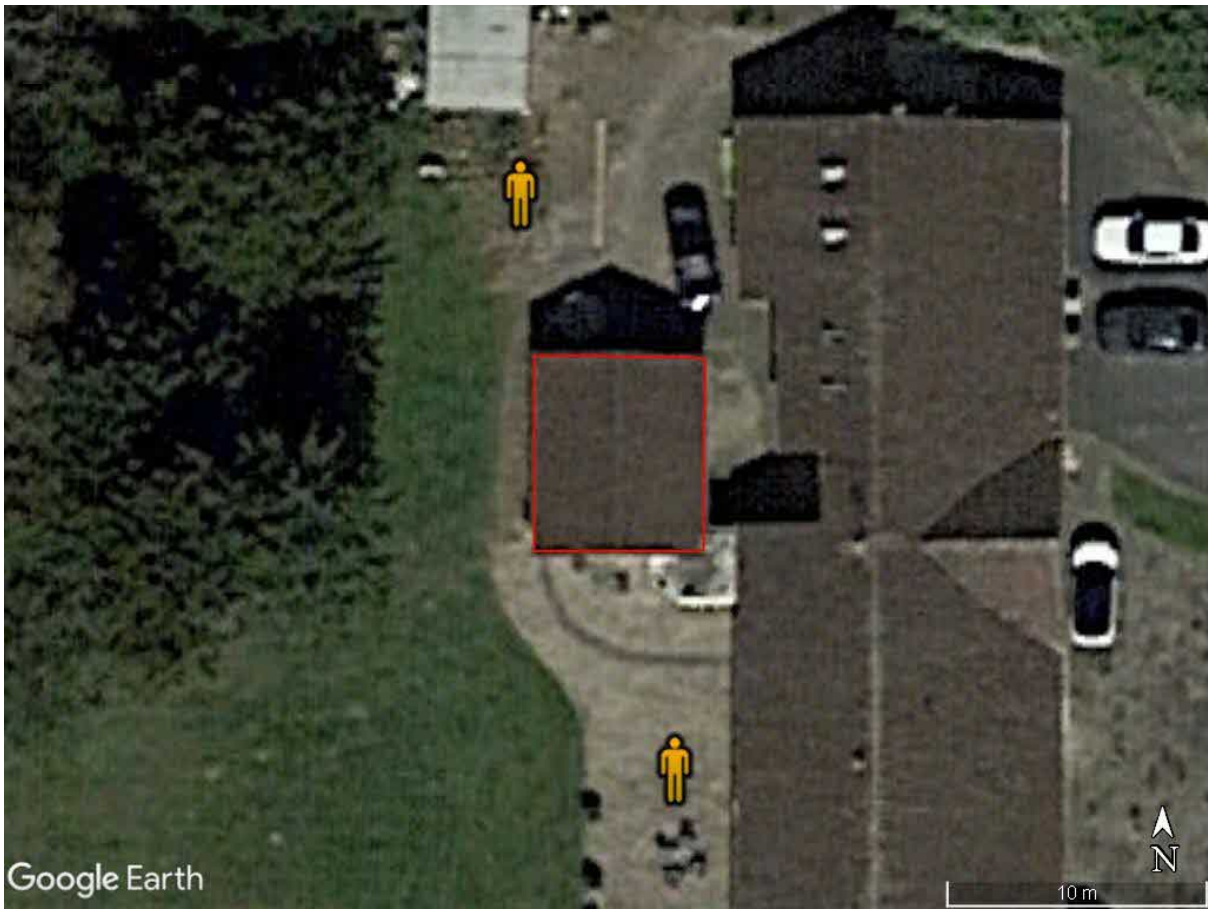
No sign of nesting birds was observed.

Suggested Phase 2 Survey Setup

To undertake roost surveys at this Site, two vantage points (VP) are suggested to cover all potential roosting features at the property. Vantage Points may be covered by

[9] Based on appearance as seen with an endoscope. Observation was minimised to avoid disturbance. The body shape, face shape and colouring, and outer ear shape are consistent with common pipistrelle bats, but some diagnostic features, such as the tragus, were not visible.

surveyors and / or night vision aids[10], assuming that best practice guidelines are followed.



[10] NVA must be high-quality cameras with additional IR lighting, paired with recording bat detectors, and operated by trained and experienced surveyors. Depending on the situation and the limitations of the equipment, one operator could potentially cover more than one VP using cameras.

Survey Photos

1 south gable

2 west aspect

3 north gable

4 east aspect

5 gap under tile on north gable (confirmed roost)

6 bat droppings under roost access

7 gap under tile on south gable (possible access)

8 bat under roof tile. Poor image due to light reflecting from cement closer to the endoscope

9 internal view of loft

10 bat droppings on internal gable wall

Appendix 4 Enhancement Examples

Schwegler Bat Tube

The 1FR Bat Tube is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface. It can also be painted to match your building with air-permeable paint if desired.

Comprised of Woodcrete with an integrated wooden panel.

Dimensions: 200mm wide x 470mm high x 120 mm deep

Entrance Dimensions: 150 x 90 x 20 mm

Weight: Approximately 9.8 kg

Habibat Integrated Bat Box

These boxes can be built into the walls of new buildings to create purpose-built crevices for bats.

Photo courtesy of Habibat

Facing products include:
Brick
Stone
Granite
Masonry
Slate
Terracotta
Tile
Timber

Dimensions: 215 mm wide x 440 mm high x 102 mm deep

Weight: Approximately 7 kg

CJ Wildlife Swift Nest Box B

Installed on or within a wall.

Dimensions: 16 x 18.5 x 33.5cm

Weight: 7kg

Woodstone

Photo courtesy of CJ Wildlife

Swift boxes are a 'universal' bird box as they are known to support all four of the red listed urban bird species (swift, house sparrow, starling & house martin) will readily take to swift bricks,

Green and Blue Bee Brick

Bee Brick™ is solid at the back and has moulded cavities where the bees will lay their eggs, sealing the entrance with mud or chewed up vegetation. Offspring emerge in the Spring and begin the process of nesting again, repeating the cycle.

Dimensions: 215 mm x 105 mm x 65 mm

Weight: 2.9 kg

Photo courtesy of Green and Blue

Appendix 5 Data for the Local Records Centre

It is a requirement under the CIEEM code of practice to provide recorded data to biological record centres. For certain records (i.e. data obtained under a government survey licence) we also have a legal obligation to forward such data.

If you have special cause to restrict the distribution of this data (which will be in the public domain), please contact us to discuss this further within one month of the issue of this report.

Species	Location address	Location county	Location Postcode	Grid Reference	Roost Type	Survey date	Purpose	Number of bats observed	Additional Information
Pipistrelle (likely common pipistrelle)	Acorn Cottage - Broad Oak, Old Rufford Road, Rufford	Nottinghamshire	NG22 9DD	SK64016501	unknown	27 September 2023	Commercial survey	1	Bat seen by endoscope. Fairly confident in identification as common pipistrelle, but view was not perfect.

Document Control

Report Issue	Notes	Author	Date
01	Original document to client.	Jo Pedder	27 September 2023
02			
03			
04			
05			

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